STRUCTURE 47D

This structure is a reinforced concrete, gated spillway with discharge controlled by a cable operated, vertical lift gate. Operation of the gates is automatically controlled in accordance with the established operational criteria. The structure is located on Canal 19 just north of Lake Hicpochee about 1.6 miles south of the U.S. Highway 27 bridge over the canal.

PURPOSE

This structure maintains optimum upstream water control stages in Canal 19 (north of the structure); it passes the design flood (50% of the Standard Project Flood) without exceeding the upstream flood design stage, and restricts downstream flood stages and channel velocities to non-damaging levels; and it permits releases from the Caloosahatchee River to meet agricultural water requirements in the area served from C-19, north of the structure, when Lake Okeechobee is too low to supply such requirements.

OPERATING CRITERIA

This structure will be operated to maintain an optimum headwater elevation of 12.5, insofar as possible, through automatic controls as follows:

When the headwater elevation rises to 12.9 feet, the gate begins to open.

When the headwater elevation rises or falls to 12.55 feet, the gate becomes stationary.

When the headwater elevation falls to 12.35 feet, the gate begins to close.

The structure will be kept open for water supply from the Caloosahatchee River into the area north of the structure.

FLOOD DISCHARGE CHARACTERISTICS

	Design*	
Discharge Rate	945 cfs[1]	1195 cfs[2]
	50 % SPF	
Headwater Elevation	13.7 feet	12.9' msl
Tailwater Elevation	13.4 feet	12.16 msl
Type Discharge	uncontrolled submerged	

[1]The design discharge apparently cannot be obtained with given headwater and tailwater elevations even with uncontrolled discharge.

[2]Rip rap has been installed to discharge 1195 cfs if downstream conditions allow

DESCRIPTION OF STRUCTURE

Type reinforced concrete, gated spillway

Weir Crest

Net Length 22.0 feet

Elevation 4.5 feet

Service Bridge Elevation 18.5 feet

Water Level which will by-pass structure 18.5 feet

Gate

Number 1

Size 8.5 ft. high by 22.7 ft. wide

Type vertical lift gate

Bottom elevation of gate, full open 15.0 feet

Top elevation of gate, full closed 13.0 feet

Control On-site, automatic with headwater control and remote computer control

Lifting Mechanism

Normal power source Commercial electricity

Emergency power source L.P. Gas driven generator

Type Hoist direct drive electric motor gear connected to cables

Date of Acceptance into Service: December 13, 1957

ACCESS: From U.S. Highway #27 via C-19 east levee

HYDRAULIC AND HYDROLOGIC MEASUREMENTS

Water Level Remote digital headwater and tailwater recorder

Gate Position Recorder Remote digital recorder

Rain Gauge Remote digital recorder

DEWATERING FACILITIES

Storage West Palm Beach Field Station

Type Steel needle beams and aluminum needles

Size and Number (per bay)

Beams 14WF84, 23'-10" long Needles 5 @ 4' wide, 1 @ 2' wide